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LETTER TO THE EDITOR

CZECH-IRISH MEETING DEDICATED TO BILATERAL COLLABORATION ON NATURAL AND MAN-MADE BIOLOGICAL AGENTS AND COUNTERMEASURES

Chruthaigh aontacht na hintinne cairdeas.
Democritus

Faculty of Military Health Sciences, University of Defence, Hradec Králové, Czech Republic (FMHS), collaborate with Colleagues and Centres of National University of Ireland, Galway (NUIG) on the security research and development of new types of countermeasures against the biological agents for several years. Based on the numerous discussions with the Prof. Lokesh Joshi (NUIG), a longer-term cooperation between these two institutions was established.

Figure 1. Entry into the historical building of National University of Irealnd, Galway.

Klára Kubelková (FMHS) together with her colleagues prepared the project proposal „The Creation of Czech-Irish Project Initiative for Solving the Biological Security Questions", which was then financially supported from the "Strategic Support for Security Research of the Czech Republic, 2019–2025 Program (IMPAKT 1)", the program of the Ministry of the Interior of the Czech Republic. Creation of a scientific network focused on the creation of new projects, the solution of which will contribute to greater biosecurity of the state was the overall aim of that.

Figure 2. Scenic downtown of Galway City.

The first Czech-Irish meeting dedicated to bilateral collaboration on natural and man-made biological agents and countermeasures was organized in Galway, Ireland, November 28-29, 2021. Our program was divided into three thematic sessions; Host-Pathogen Interactions (Session I), Therapeutics and Vaccines (Session II), and Medical Countermeasures and Personal Protection (Session III). The scientific program was preceded by an informal meeting of the scientists from NUI Galway and FMHS Hradec Králové.

The meeting began with a welcome performance of NUI Galway, FMHS Hradec Králové, the Defence Forces of Ireland, and of Ray Lane, a retired lieutenant colonel and globally renowned expert in improvised explosive devices, currently dealing with CBRNe (Chemical, Biological, Radiological, Nuclear, and Explosive Agents) issues. During the first session, issues related to the study of outer membrane vesicles and nanotubes (Jana Klimentová, FMHS), posttranslational modification of bacterial proteins (Lucie Balonová –presented by Ivona Pávková, FMHS), bacterial response to acid stress demonstrated on the *Listeria monocytogenes* model (Conor O´Byrne, NUIG), and mechanisms of colonization used by bacteria (Aoife Boyd, NUIG) were presented and discussed. The studies focussed on host immune response and the development of future vaccine and therapeutics against severe infectious agents were the dominant theme of Session II. Ivona Pávková (FMHS) presented the study proposal suitable for mutual Czech-Irish collaboration focused on the utilization of nanoparticles for the treatment of intracellular infections and vaccine development. Klára Kubelková (presented by Aleš Macela - FMHS) demonstrated the production of early infection induced natural antibody clones as possible predictive markers of severity of infection on the experimental models of *Francisella tularensis* infection and SARS-CoV-2. Host response to COVID-19 and the relevant serum biomarkers was the subject of the lecture presented by Michelle Kilcoyne (NUIG). Stephen Cunningham (NUIG) closed the Session II by the presentation of some recent technologies that can be used for creation of protective tools against infectious agents. Marta Utratna and Justine O´Sullivan (NIU) opened Session III on creation of suitable tools for countermeasures against biothreat agents and toxins, with lecture about Pathogen Capture and Protection against Infectious Agents. Alena Myslivcová-Fučíková (FMHS and University of Hradec Králové) talked about biological toxins, methods for their detection and identification, and the suitability of lectins

for their selective purification. Petr Pajer´s (Military Health Institute, Prague - MHI) talk has been targeted to application of the genomic methods to analysis of dangerous biological agents. Jiri Dressler (MHI) shared the capabilities of the Military Health Institute in biological threat identification and analysis using state of the art technologies and closed the official part of our scientific meeting.

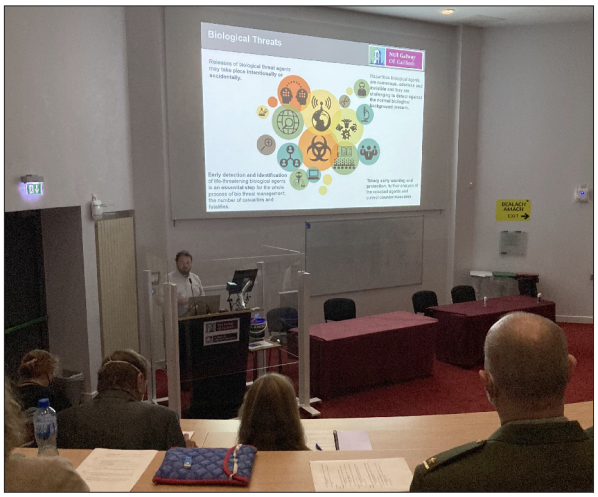

Figure 3. Lecture of Stephen Cunningham, NUIG – Session II.

Figure 4. Aleš Macela present the lecture of Klára Kubelková, FHMS – Session II.

Our formal discussions followed by informal discussions during coffee and lunch breaks which were full of very interesting and inspirational ideas. We really believe the whole meeting opened lot of new areas of future collaboration, for example at the branches as crises management is, or infection biology, and studies on new prophylactic tools against highly infectious agents.

We are very thankful for hospitality and great organizational effort from the side of our Ireland friends. The whole meeting was held in very warm atmosphere, even in this very hard pandemic time. All of the attendees followed all anti-Covid countermeasures.

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